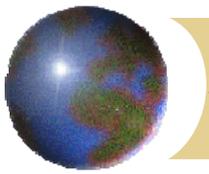


Introduction to U.S. Climate Change Policies – PFC, HFC, and SF₆ Partnerships

Scott C. Bartos
U.S. Environmental Protection Agency
Climate Change Division
November 29, 2006

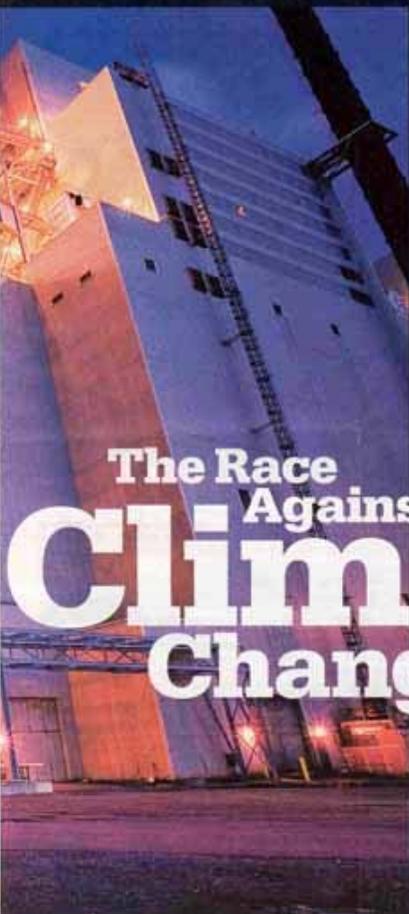
bartos.scott@epa.gov





Organization

- Purpose: Provide framework for panel discussion
- Dynamic Policy Landscape
 - International Policies
 - U.S. Policy – 3 elements
 - 1) Slow emissions growth
 - 2) Advance climate science and technology
 - 3) Enhance international cooperation
 - U.S. State & Regional Policies
- Conclusion



O N NOV. 21 power company executives from all over the country gathered in the Pit, a spacious General Electric auditorium in Crotonville, N.Y., to meet with GE CEO Jeffrey R. Immelt and his team. The day was overcast and cold, but the discussion was about the warming climate. At one point in the meeting, David J. Slump, GE Energy's chief marketing executive, asked for an informal vote: How many of the 30 or so utility and GE business executives thought that, once President George W. Bush was no longer in office, the U.S. would impose mandatory curbs on the emissions of carbon dioxide and other greenhouse gases linked to global warming? Four out of five of them agreed. "Forget the science debate," says Cinergy Corp. CEO James E. Rogers, who was at the meeting. "The regulations will change someday. And if we're not ready, we're in trouble."

The world is changing faster than anyone expected. Not only is the earth warming, bringing more intense storms and causing Arctic ice to vanish, but the political and policy landscape is being transformed even more dramatically. Already, certain industries are facing mandatory limits on

The Race Against Climate Change

How top companies are reducing emissions of CO₂ and other greenhouse gases
BY ADAM ASTON AND BURT HELM

December 12, 2005 | BusinessWeek | 59

H'S GITMO WARNINGS A BOOMER MUSIC QUIZ

Newsweek

\$4.50 www.newsweek.com

The New Greening Of America

from Politics to Lifestyle, Why Saving The Environment Is Suddenly Hot

VANITY FAIR

SPECIAL [GREEN ISSUE]

A THREAT GRAVER THAN TERRORISM: GLOBAL WARMING
 How much of New York, Washington, and other American cities will be underwater?

GEORGE CLOONEY, JULIA ROBERTS, ROBERT F. KENNEDY JR., AND AL GORE
 and the call for A NEW AMERICAN REVOLUTION

PLUS EXCLUSIVE BOOK EXCERPT!
THE BOSTON STRANGLER
 MY MOTHER'S BRUSH WITH DEATH BY SEBASTIAN JUNGER

NOVEMBER 14, 2005 \$4.95 CANADA / FOREIGN www.vanityfair.com

Worry flows from Arctic ice to tropical waters

Rising temperatures already having effect on trout fisheries and Pacific villagers, polar bear populations and coral reefs, Scandinavian forests and island resorts

Global Warming

Global warming is a global phenomenon that is affecting the entire planet. It is caused by the increase in greenhouse gases in the atmosphere, which trap heat and cause the Earth's temperature to rise. This has led to a variety of environmental problems, including melting glaciers, rising sea levels, and more frequent and severe weather events.

Part of a four-day series

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JOIN CLIF BAR IN THE FIGHT AGAINST GLOBAL WARMING.

clifbar.com

Wash clothes in warm or cold water, not hot.
 Carbon dioxide reduction = 350 lbs./year.*

Plant a tree.
 Reduce cooling costs by planting trees next to your home.
 Carbon dioxide reduction = 13 lbs./year.*

Buy energy-efficient compact fluorescent light bulbs.
 Carbon dioxide reduction = 300 lbs./year.*

Buy green energy.
 Join Clif Bar in supporting the development of new sources of wind energy through our partnership with Nantux Energy. Carbon dioxide reduction = 12,000 lbs./year. (based on 1 kilowatt-hour.)

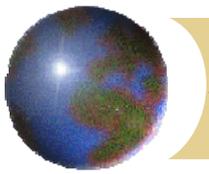
To find out more about the Environmental Defense Action Fund's Undo It campaign against global warming, visit undoit.org.

* Carbon dioxide reduction amounts based on averages.

CLIF BARS NOURISH YOUR BODY AND THE EARTH.

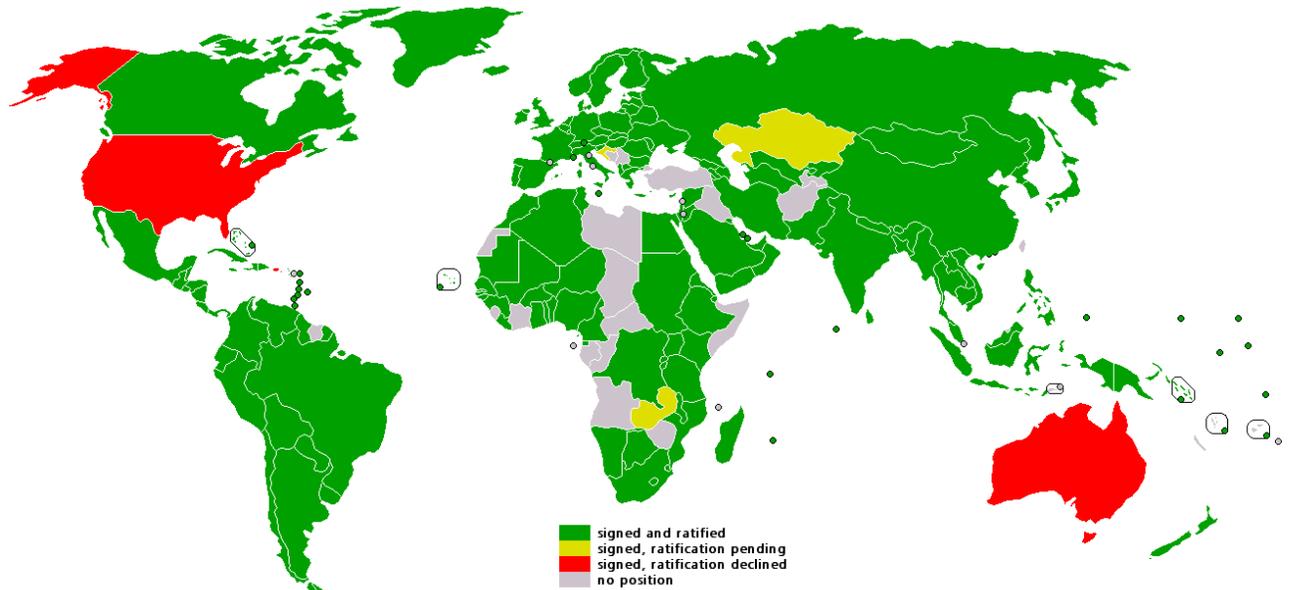
“Changing attitudes towards climate change is not like selling a particular brand of soap – it’s like convincing someone to use soap in the first place”

>> Futerra, www.futerra.co.uk

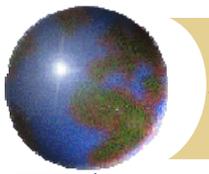


International Coordination

- Kyoto Protocol – entered into force on Feb. 16, 2005
 - 165 countries
 - 1st commitment period 2008 – 2012
 - 61.6% of Annex I (developed) country GHG emissions

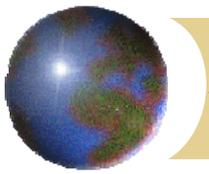


Map courtesy of Wikipedia: http://en.wikipedia.org/wiki/Image:Kyoto_Protocol_participation_map_2005.png



Three Elements of U.S. Climate Change Policy

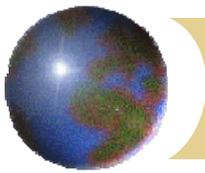
- Slow domestic GHG emissions growth
 - Partnerships challenge businesses (and government) to reduce emissions
 - High global warming potential (GWP) industries
- Advance climate science and technology
 - Annual investment of \$5.5 billion for science, technology, and tax incentives
- Enhance international cooperation



U.S. Policy – Slow GHG Emissions Growth

- Reduce U.S. GHG intensity by 18% from 2002 by 2012
 - 2002 = 183 metric tons GHG/\$1 million GDP
 - 2012 = 151 metric tons GHG/\$1 million GDP
- Voluntary partnerships with industries
 - All major sources of PFCs, HFCs, and SF₆
 - Climate VISION – February 2003, 15 sectors
 - **Aluminum**
 - Business Roundtable
 - Chemical Manufacturing
 - Forest Products
 - Lime
 - Minerals
 - Oil and Gas
 - **Semiconductors**
 - Auto Manufacturers
 - Cement
 - **Electric Power**
 - Iron and Steel
 - **Magnesium**
 - Mining
 - Railroads



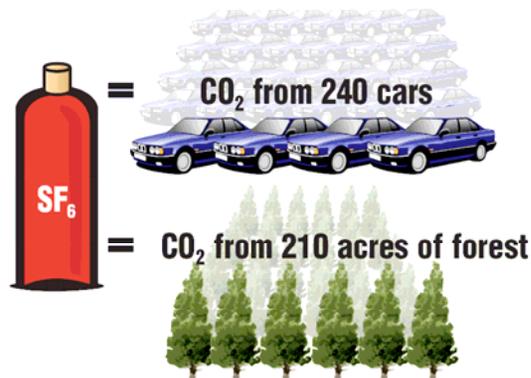


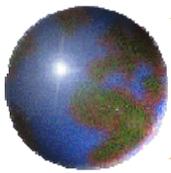
Powerful Global Warming Gases

TABLE 25. GLOBAL WARMING POTENTIALS (GWPS) AND ATMOSPHERIC LIFETIMES OF GREENHOUSE GASES

GREENHOUSE GAS	GLOBAL WARMING POTENTIAL FOR 100 YEARS	ATMOSPHERIC LIFETIME (YEARS)
Carbon Dioxide	1	50-200
Methane	21	12± 3
Nitrous Oxide	310	120
Hydrofluorocarbons	140-11,700	1,5-264
Perfluorocarbons	6,500-9,200	3,200-50,000
Sulfur Hexafluoride	23,900	3,200

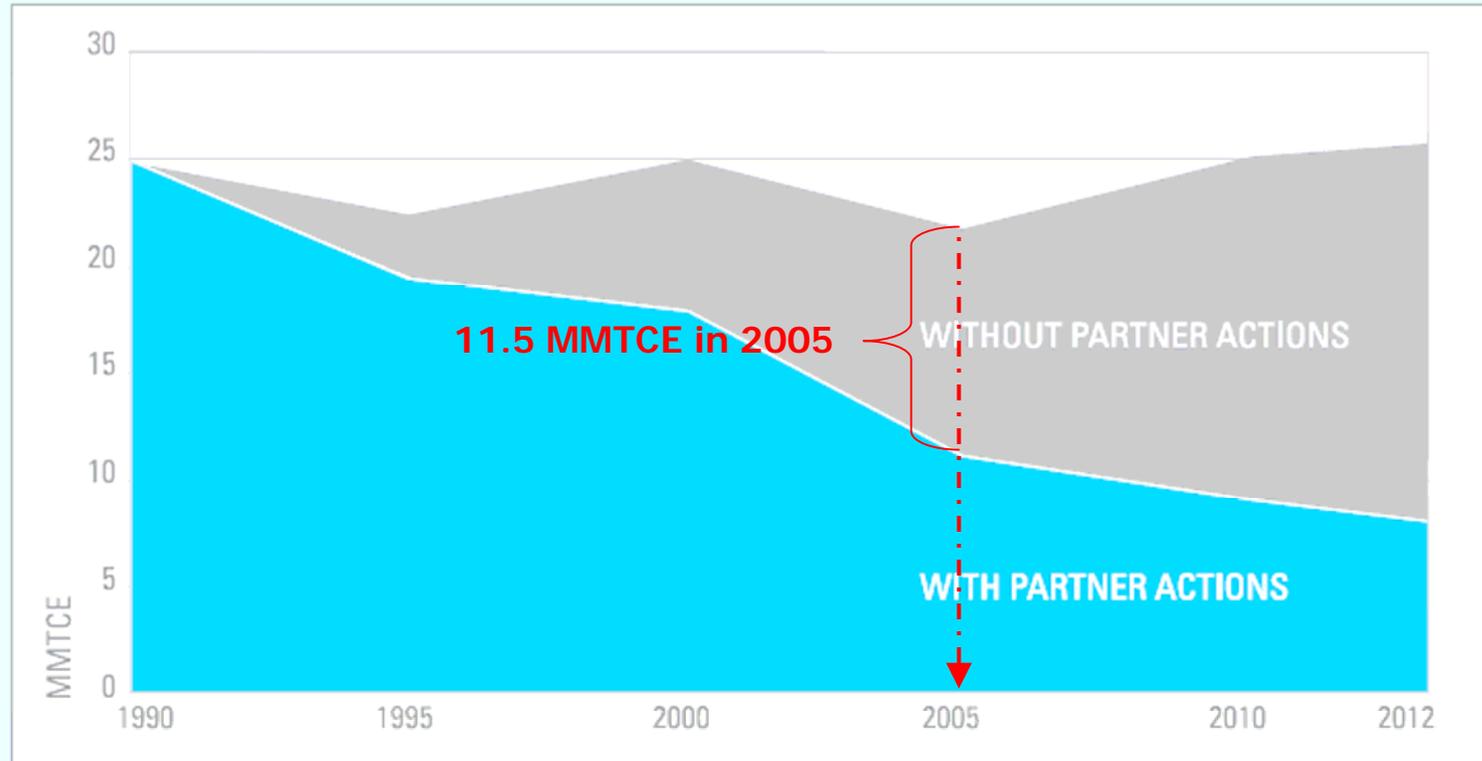
Source: IPCC 1996

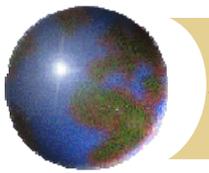




High GWP Industrial Partnership Achievements

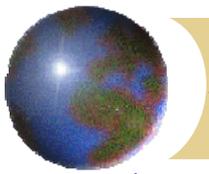
FIGURE 19. PARTNER ACTIONS ARE PROJECTED TO MAINTAIN EMISSIONS OF HIGH GWP GASES BELOW 1990 LEVELS THROUGH 2012





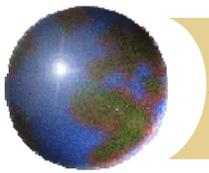
EPA's Voluntary Climate Change Programs





Advance Climate Science and Technology

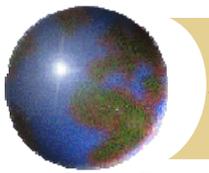
- U.S. Climate Change Science Program (CCSP) responsible for coordinating research across agencies
 - National Aeronautics and Space Administration (NASA) and National Oceanic & Atmospheric Administration (NOAA) are the primary climate science agencies
- CCSP is preparing 21 "Synthesis and Assessment Products" on key climate science issues
 - EPA has lead on 4 reports and contributes to several others
- EPA's Climate Change Division is responsible for broad communication on climate science
 - Website, print materials, and technical conferences
- www.epa.gov/climatechange
- www.climatescience.gov
- www.climateotechnology.gov



Enhance International Cooperation

- U.S. committed to mutual goals of **sustainable development and economic growth**
 - ▣ EPA participates in negotiations under the United Nations Framework Convention on Climate Change (UNFCCC)
- Engages in bilateral relationships with key nations 
- Supports international efforts:
 - ▣ Asia-Pacific Partnership on Clean Development and Climate
 - ▣ World Semiconductor Council – PFC / Climate Partnership
 - ▣ Capacity building
 - ▣ Intergovernmental Panel on Climate Change (IPCC)

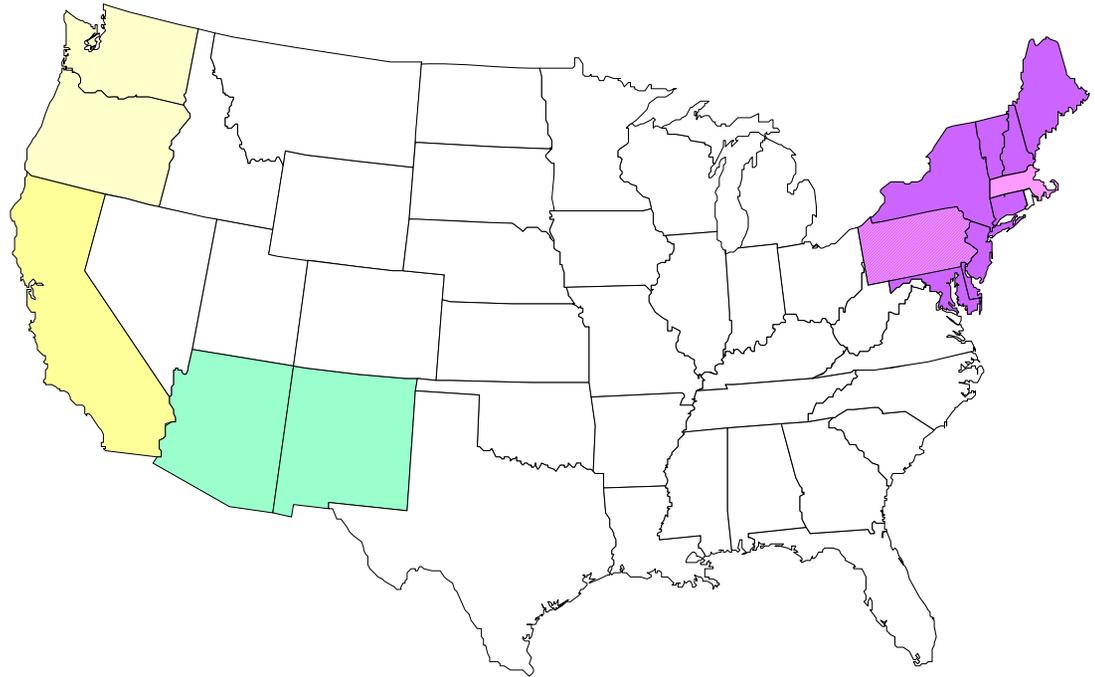


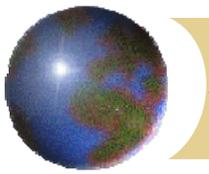


U.S. Regional, State, & Local Climate Change Strategies

● States Forming "Climate Coalitions"

- Regional Greenhouse Gas Initiative (RGGI)
- West Coast Governors' Global Warming Initiative
- Southwest Climate Change Initiative
- 23 States and D.C. have renewable portfolio standards (RPS)
 - NY seeks 24% by 2013



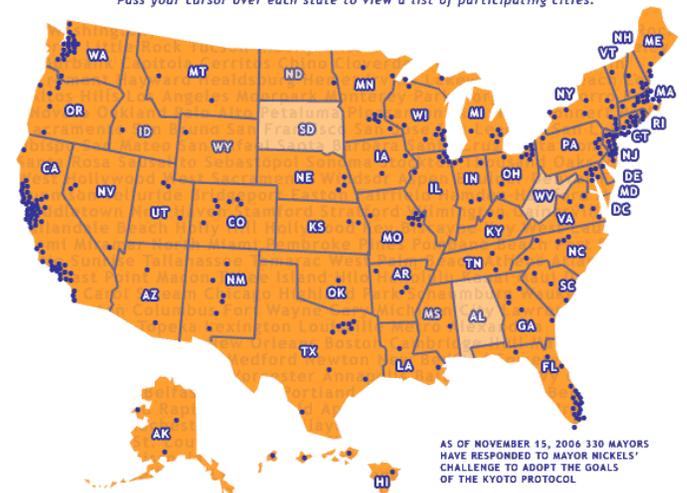


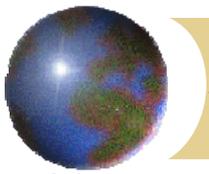
State & Local Climate Change Policies

- California – August 2006
 - ❑ Reduce emissions 25% by 2020
 - ❑ World' s 12th largest emitter
- U.S. Mayors Climate Protection Agreement
 - ❑ 330 cities, >53 million citizens
 - ❑ Meet or exceed Kyoto goal
 - 7% below 1990 level by 2012
- Boulder, Colorado “Carbon Tax”
 - ❑ Reduce carbon emissions by 350,000 metric tons in 2012



Pass your cursor over each state to view a list of participating cities.





Conclusion – Industry Leadership Critical for Success

- Dynamic Policy Landscape
 - Variety of approaches and mechanisms
 - From local to global in scale
- 2012 – U.S. will review progress toward goal and take additional action if necessary
- Today's greatest environmental challenge requires global cooperation
 - Public and private sectors
- Industry leaders have opportunity to improve and advise effective and consistent climate protection policy